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THE WANDERER BUTTERFLY IN WESTERN AUSTRALIA

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The Wanderer butterfly, *Danaus plexippus* (L.), previously thought to be rare or absent in Western Australia, has recently been observed in numbers at Kelmscott, about 16 miles from Perth.

This large, well known butterfly, called the Monarch in North America, has spread from the Americas to many parts of the world by natural means. It has established itself over a considerable area of eastern Australia, being first seen in Brisbane in 1870 and in Melbourne in 1872. Recent workers agree that the species is widespread from Cairns to Melbourne and Adelaide, but there has been some uncertainty about its distribution in Western Australia. Barrett and Burns in *Butterflies of Australia and New Guinea* (1951) say that it is rarer in Western Australia; Common in *Australian Butterflies* (1964) does not include Western Australia in its distribution; Burns and Rotherham in *Australian Butterflies in Colour* (1969) say that it is found in all States except Western Australia; and Common in *The Insects of Australia* (1970) says that it now exists in Australia wherever its introduced milkweed food-plants are present. In Australia, unlike in North America, the Wanderer does not show the extensive two-way migrations and gregarious hibernation, although winter aggregations do occur in New South Wales and South Australia.

There are specimens from the south-west of Western Australia in the entomological collection of the Department of Agriculture, South Perth. The collection comprises one male collected by H. M. Giles at Smiths Mill (now known as Glen Forrest)* on 17th March, 1898, and the following by collectors unknown: one male on 16th April, 1951, at Esperance, one female on 7th May, 1951, at Dumbleyung, and three males and five females on 26th May, 1951, at Esperance. As far as is known, no Western Australian Wanderers collected prior to 1951 are present in any other collections. The Australian National Insect Collection, Canberra, has no examples of the species from Western Australia (Common, personal communication).

The recent outbreak at Kelmscott was reported to me by Jamie Stuart, a preparator of the Western Australian Museum. Accompanied by Alan Page, another preparator, he was driving through Kelmscott on 9th April, 1971, when he saw the species among large numbers of the Lesser Wanderer, *Danaus chryssipus petilia* (Stoll), which were flying around a flowering *Lantana* hedge. No specimens were collected. Therefore with Alan Page, I visited the area on 14th April and collected 10 specimens (5 males, 5 females) to confirm the sighting. During 1½ hours of collecting from 11 a.m., we saw a total of about 20 individuals. All these were in excellent condition and had obviously recently emerged in the area. Several other species of butterflies were evident. These included the Lesser Wanderer, which was by far the commonest, the Cabbage White, *Pieris rapae* (L.), the Western Brown, *Heteronympha merope duboulayi* (Butl.), the Meadow Argus, *Precis villida calybe* (Godt.), and the Common Grass-blue, *Zizeeria otis labradus* (Godt.).

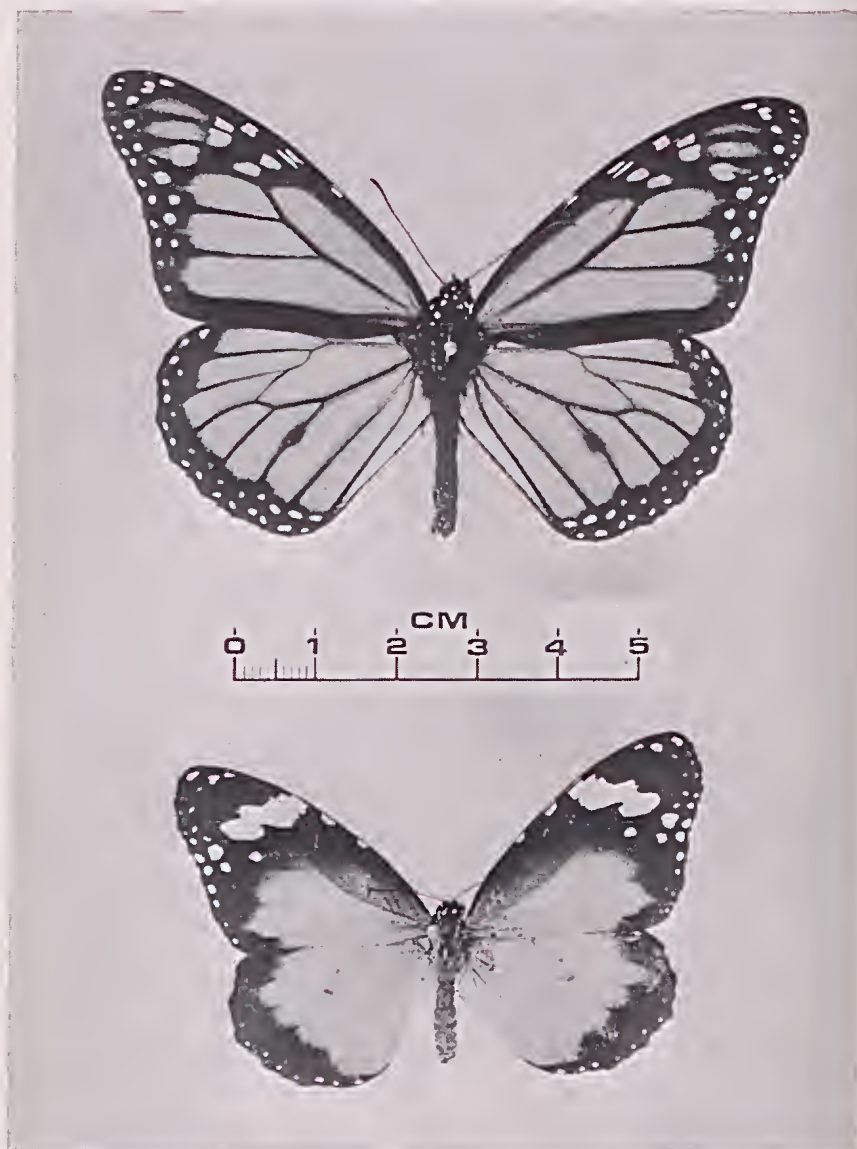
The Wanderer can be distinguished from the Lesser Wanderer by the following characteristics. The Lesser Wanderer has a wingspan of up to about 3 inches and dorsally its wing is tawny orange or tawny yellow with broad black margins and a white bar across the apex of the wing.

* The railway station was last referred to as "Smiths Mill" in the railway time table of 1916, and first appeared as "Glen Forrest" in the time table of 1918.

The Wanderer has a wingspan of $3\frac{1}{2}$ to $4\frac{1}{2}$ inches and dorsally its wing is tawny orange with black margins carrying white spots and the veins are black.

The following information about the distribution in Western Australia of relevant milkweed plants has been kindly provided by Mr. R. D. Royce, Curator of the State Herbarium:

Calotropis occurs in the tropical north and although becoming widely



The Wanderer, *Danaus plexippus* (L.), above, and the Lesser Wanderer, *D. chryssipus petilia* (Stoll), below. Both specimens collected at Kclmscott, W.A., by L. E. Koch and A. Page on 14th April, 1971.

naturalized there, does not occur in the southern half of the State. *Araujia* is a garden plant, but not very commonly grown. *Asclepias rotundifolia* is not known to occur here. *As. curassavica* is a garden plant, but has been recorded as naturalized at Fremantle in 1960, at Geraldton in 1964, and at Trayning in 1965. *As. fruticosa* is commonly referred to as the Duck plant, Swan plant, or Narrow-leaf Cotton-bush, and has long been grown in gardens. From specimens in the Herbarium it was first recorded in 1918. Since 1970 it has been gazetted as a primary noxious weed, because it has become widespread.

Where the butterflies were observed at Kelmescott, *As. fruticosa* is abundant, especially alongside a creek. Larvae and pupae of the Wanderer have subsequently been found there on this plant.

Before the collections made at Kelmescott, there were no Western Australian Wanderers in the Western Australian Museum. Since the outbreak a few Wanderers have been found at some other localities around Perth, e.g. Churchmans Brook, Dianella and Roleystone. Mr. W. A. Oddy, of Maylands, has also reported observing large numbers of Wanderers during the present outbreak at Kelmescott.

Mr. L. Groom, of Claremont, W.A., advises that he has seen the following Wanderers in Western Australia: one at Nedlands in December, 1966, one at Nedlands in January, 1967; at Kings Park in September, 1967, at Karrakatta and suburbs in October, 1967, many in Forestville Reserve in November, 1967, and in Kings Park in December, 1967; at Augusta in January, 1968; and two in Talbot Road Reserve at Guildford in September, 1968. But he has not found their immature stages.

Dr. C. N. Smithers, Principal Curator, Australian Museum, Sydney, is analyzing the voluminous data on the Wanderer in eastern Australia. I have discussed the problem of Wanderers in Western Australia with him and also with Dr. I. F. B. Common, C.S.I.R.O., Canberra.

From the available data it is not possible to be absolutely certain whether the Wanderer has been present in Western Australia continuously since 1898, or to comment on its probable further distribution and abundance around the year 1951 when it was found at Esperance and Dumbleyung. Because the Wanderer is large and easily recognized, it is most unlikely that it had been established before 1951. Alternatively, it has been permanently present in Western Australia for decades although only in small numbers and in isolated localities. However, if it has not been a permanent resident, the 1898 and 1951 occurrences must be considered as the result of isolated introductions that did not become established.

The greatly improved methods of transportation in the fifties and later is thought to have enabled importation of the immature stages deliberately or fortuitously, resulting in temporary or permanent establishment. The possibility that the label data of the 1898 Smiths Mill specimen is incorrect must not be overlooked, but the appearance of the specimen indicates that it is an old one, consistent with the year of collection on its label. The 1951 specimens seem most likely to be from a temporary establishment of the species. In more recent years, it has been an easy matter for anyone to obtain larvae from the eastern states or elsewhere, and thus to liberate live material accidentally or purposely in Western Australia. One or more persons could have been responsible for this; however, the Wanderer is a large showy butterfly which is not known to be harmful to anything except certain noxious introduced weeds.

In the normal course of events the Wanderer probably now breeds here through most months of the year. It seems to be definitely established around the Perth area where it has been from at least 1966. The naturalization and abundance of its introduced food-plant in various localities has enabled this.

All observations of the adults are during the breeding period. Therefore it appears that there are overwintering areas, such as presumably Kelmescott in the Perth area, to which they retire for the non-breeding months. In exceptionally cold years, clusters of overwintering non-breeders would be expected to occur provided that the population numbers are sufficiently high.